

REMARKS

This is intended as a full and complete response to the Final Office Action dated August 6, 2003, having a shortened statutory period for response set to expire on November 6, 2003. Please reconsider the claims pending in the application for reasons discussed below.

Claims 46, and 48-72 remain pending in the application and are shown above. Reconsideration of the rejected claims is requested for reasons presented below. Claims 50, 61, and 69 have been cancelled without prejudice by Applicant. Applicant reserves the right to pursue the subject matter of cancelled claims 50, 61, and 69 in subsequent applications. Cancellation of claims 50, 61, and 69 is not a concession that the claims are not patentable but rather is Applicant's decision to pursue the subject matter of claims 46, 48-49, 51-60, 62-68, and 70-72.

Claims 46, 56, 65, and 71-72 are amended to include the limitations of canceled claims 50, 61, or 69. Claims 48-49, 51, 62, 64, and 70 are amended to include changes made to the dependency of the pending claims due to the cancellation of the corresponding independent claims. It is believed that no new matter has been introduced in these claims. Accordingly, allowance of the pending claims 46, 48-49, 51-60, 62-68, and 70-72 is respectfully requested.

Applicant respectfully submits herewith a terminal disclaimer in compliance with 37 CFR 1.321(c) to permit allowance of the subject matter of claims 46, 48-49, 51-60, 62-68, and 70-72 with regard to the Examiner's comments that Applicant's terminal disclaimer (paper #5, page 8) has not been filed.

35 U.S.C. §112 Rejection

Claims 48-53 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that claims 48, 49, and 50 are dependent upon cancelled claim 47. Applicant has cancelled claim 50 and amended claims 48-49 and 51 to be dependent on independent claim 46, and respectfully requests withdrawal of the rejection.

35 U.S.C. §103 Rejection

Claims 46, 48-49, 51-60, 62-68, and 70-72 are not obvious over Japanese Patent #1050802 in view of *Kuriki et al.*, *White et al.*, *Edwards et al.*, and *Tanaka* under 35 U.S.C. §103(a)

Claims 46, 48-72 stand rejected under 35 U.S.C. 103(a) as being obvious over Japanese Patent #1050802 in view of *Kuriki et al.* (U.S. Patent No. 6,264,748), *White et al.* (U.S. Patent No. 6,235,634), *Edwards et al.* (U.S. Patent No. 5,944,857), and *Tanaka* (U.S. Patent No. 5,976,327). Applicant respectfully traverses the rejection.

Japanese Patent No. 10050802 does not teach, show, or suggest a parallel system, a movable lid, and lift pins as pointed out by the Examiner. Namely, Japanese Patent No. 10050802 does not teach, show, or suggest a processing system having a robot in a mini-environment combined with multiple load-lock chambers, each load lock chamber connected to a single process chamber and including a lid, perforations, lift pins, and a transfer robot, which is different from the robot in the mini-environment. Specifically, Japanese Patent No. 10050802 does not teach, show, or suggest one or more perforations disposed in the bottom of each load lock chamber and one or more lift pins slidably disposed through the one or more perforations, as recited in the amended claims 46, 56, 65, and 71-72, and claims dependent therefrom.

Most importantly, there is no motivation or suggestion in Japanese Patent No. 10050802 to combine the teachings and provide a robot disposed within a mini-environment, one or more process chambers connected to the one or more load lock chambers, each load lock chamber connected to a single process chamber, and each load lock chamber include an enclosure having a bottom, a lid and sidewalls defining a chamber cavity, wherein one or more perforations are disposed in the bottom, one or more lift pins slidably disposed through the one or more perforations, and a transfer robot disposed in each load lock chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom.

Kuriki et al. discloses a multichamber integrated process system having a cassette station 1, a transferring section 10, a processing section 2, and an interface section 3. The processing section 2 is divided into multiple process blocks 2a-2d

connected by multiple transferring apparatuses 17-19 and 111. Process block 2a contains a load lock chamber 51 connected to a transferring chamber 52 and two process chambers 53 and 54 connected to the transferring chamber 52. Process block 2d contains a load lock chamber 121 connected to a transferring chamber 122 and two film forming chambers 123 and 124 connected to the transferring chamber 52. Each transferring chamber 52 provides a substrate transferring member 70 (a robot) of a multi-joint arm type to receive and transfer substrates. The substrate transferring member 70 of *Kuriki et al.* is disposed outside the load lock chamber.

The load lock chambers 51, 121 of *Kuriki et al.* are connected to the transferring chamber 52, not the process chambers 34a-34d and 123-124. Thus, *Kuriki et al.* does not teach, show, or suggest one or more process chambers connected to the one or more load lock chambers, wherein each load lock chamber is connected to a single process chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom. In addition, *Kuriki et al.* does not teach, show, or suggest a movable lid, and lift pins. Specifically, *Kuriki et al.* does not teach, show, or suggest one or more perforations disposed in the bottom of each load lock chamber and one or more lift pins slidably disposed through the one or more perforations, as recited in the amended claims 46, 56, 65, and 71-72, and claims dependent therefrom.

Further, there is no motivation or suggestion in *Kuriki et al.* to combine the teachings and provide a robot disposed within a mini-environment, one or more process chambers connected to the one or more load lock chambers, each load lock chamber connected to a single process chamber, and each load lock chamber include an enclosure having a bottom, a lid and sidewalls defining a chamber cavity, wherein one or more perforations are disposed in the bottom, one or more lift pins slidably disposed through the one or more perforations, and a transfer robot disposed in each load lock chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom.

White et al. discloses a processing system having four islands 42A-42D on opposite of a track 44 and a robot 70 movable along the track 44. Each island includes a load lock chamber 50 for heating, a load lock chamber 52 for cooling, and at least one processing chamber 54 (See, Col. 4, lines 47-54.) In addition, substrates are delivered to each heating load lock chamber and received from each cooling load lock chamber

via an atmospheric loading robot 128A and an atmospheric loading robot 128B, respectively. Both atmospheric loading robots, 128A and 128B are disposed outside of the respective load lock chambers.

White et al. does not teach, show, or suggest each load lock chamber is connected to a single process chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom. The two load lock chambers of *White et al.* are connected to a single process chamber for delivering substrates into and outside of the process chamber, respectively. In addition, *White et al.* does not teach, show, or suggest a movable lid, and lift pins. Specifically, *White et al.* does not teach, show, or suggest one or more perforations disposed in the bottom of each load lock chamber and one or more lift pins slidably disposed through the one or more perforations, as recited in the amended claims 46, 56, 65, and 71-72, and claims dependent therefrom.

Further, there is no motivation or suggestion in *White et al.* to combine the teachings and provide a robot disposed within a mini-environment, one or more process chambers connected to the one or more load lock chambers, each load lock chamber connected to a single process chamber, and each load lock chamber include an enclosure having a bottom, a lid and sidewalls defining a chamber cavity, wherein one or more perforations are disposed in the bottom, one or more lift pins slidably disposed through the one or more perforations, and a transfer robot disposed in each load lock chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom.

Edwards et al. discloses a wafer manufacturing cluster tool 30 having process chambers 34a-34d connected to a transfer chamber 33, and a plurality of single wafer load locks 37a-37b, connected to the transfer chamber 33 and each for transferring a single wafer. The transfer chamber 33 has a pivotal and extendable wafer transfer arm 35 (robot) of a commercially available type. (See, Col. 7, lines 5-15) for moving wafers inbound of the transfer chamber through one load lock and moved outbound of the transfer chamber through another load lock. *Edwards et al.* further discloses a wafer transfer device robot 42 for transferring wafers from wafer carriers into the inbound load lock and from the outbound load lock into another wafer carriers. The robots 35 and 42 of *Edwards et al.* are disposed outside the load lock chamber. There is no transfer robot disposed in the load lock 37a-37b of *Edwards et al.*

The load locks of *Edwards et al.* are connected to the transfer chamber 33, not the process chambers 34a-34d. Thus, *Edwards et al.* does not teach, show, or suggest one or more process chambers connected to the one or more load lock chambers, wherein each load lock chamber is connected to a single process chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom.

Further, there is no motivation or suggestion in *Edwards et al.* to combine the teachings and provide a robot disposed within a mini-environment, one or more process chambers connected to the one or more load lock chambers, each load lock chamber connected to a single process chamber, and each load lock chamber include an enclosure having a bottom, a lid and sidewalls defining a chamber cavity, wherein one or more perforations are disposed in the bottom, one or more lift pins slidably disposed through the one or more perforations, and a transfer robot disposed in each load lock chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom.

Tanaka et al. discloses a method and an apparatus for depositing a metal film on a substrate including a high density plasma physical vapor deposition (HDP PVD) chamber and a controller to modulate a RF bias power applied to a substrate in the chamber. *Tanaka et al.* further discloses lift pins 38 inside the HDP PVD process chamber, not a load lock chamber.

Therefore, *Tanaka et al.* does not teach, show, or suggest one or more perforations disposed in a bottom of one or more load lock chambers, one or more lift pins slidably disposed through the one or more perforations, and a transfer robot disposed in each load lock chamber and each load lock chamber is connected to a single process chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom. Further, there is no motivation or suggestion in *Tanaka* to combine the teachings as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom.


Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See, *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.

1992); and MPEP 2143.01. If the rationale to combine the prior art is based on common knowledge in the art, the examiner must cite a reference in support of his position or supply an affidavit attesting to the facts. (See, MPEP 2144.03.)

Therefore, Japanese Patent #1050802 in view of *Kuriki et al.*, *White et al.*, *Edwards et al.*, and *Tanaka*, alone or in combination, do not teach, show, or suggest a robot disposed within a mini-environment, one or more process chambers connected to the one or more load lock chambers, each load lock chamber connected to a single process chamber, and each load lock chamber include an enclosure having a bottom, a lid and sidewalls defining a chamber cavity, wherein one or more perforations are disposed in the bottom, one or more lift pins slidably disposed through the one or more perforations, and a transfer robot disposed in each load lock chamber, as recited in claims 46, 56, 65, and 71-72, and claims dependent therefrom. Withdrawal of the rejection is respectfully requested.

In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed. Having addressed all issues set out in the Final Office Action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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